

Exploring Local Government Challenges in Effective Road Safety Delivery

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Key Findings

- Local government face several challenges in delivering road safety outcomes.
- Road safety outcomes on local roads can be enhanced with central agency assistance.
- Increased funding is only one part of a broader approach needed to assist local government.

Abstract

Half of all vehicle kilometres travelled and 62% of all deaths and serious injuries in New Zealand occur on local government roads. The upward trend in road trauma has revealed a growing disparity in safety performance between locally and centrally managed roads. The increasing gap, which is mirrored by differing levels of investment, was the stimulus behind a national project to understand the dynamics of local government road safety delivery and investment. Engagement workshops with local councils throughout New Zealand uncovered an array of common challenges – some of which were not anticipated when the project commenced.

Keywords

Local Government, Program, Funding, Engagement, Workshop, Road Safety

Glossary

DSi	Deaths and serious injuries
KiwiRAP	New Zealand's Road Assessment Programme that adheres to iRAP protocols
Mega Maps	New Zealand's Online Risk Assessment Tool
Safer Journeys	New Zealand's Road Safety Strategy 2010-20

Introduction

Since 2010, the New Zealand Transport Agency ('the Agency') and their Safer Journeys partners have commissioned the development of a number assessment tools and techniques that move away from traditional methods of identifying high-risk locations. Reliance on total crash numbers and the social cost of crashes have been replaced with approaches based around risk and the likelihood of death and serious casualties occurring in the future.

Increasingly, the assessment tools and techniques have been developed to apply to local roads and not just State Highways that are rich in data. The rationale for the focus towards local roads is that while the vehicle kilometres travelled on local roads is similar to State Highway network; the number of people killed and seriously injured on local roads accounts for 62% of all DSi compared to 38% on State Highways. The local road network is also substantially longer than the State Highway network (approximately 100,000km compared to 11,000). The much longer length combined with lower volumes and a more dispersed pattern of crashes creates another series of issues around the planning of road safety programs.

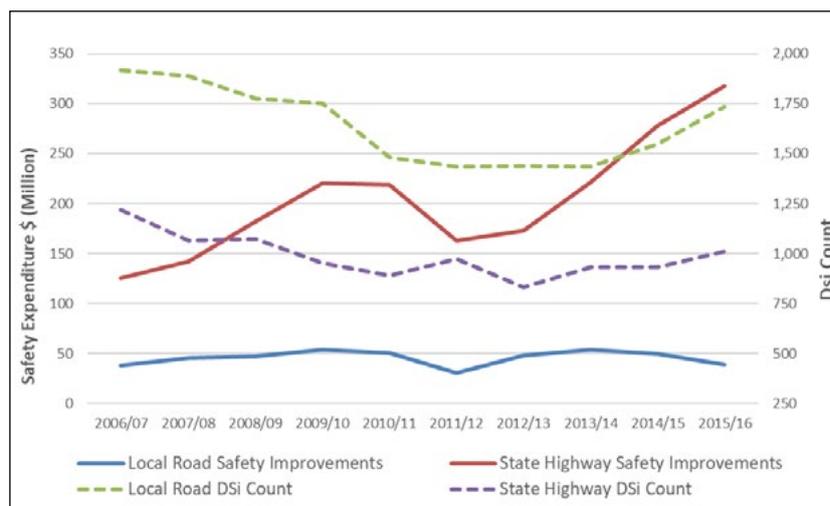


Figure 1. Comparison of Local Road and State Highway DSi and Safety Expenditure

The trend in safety performance is one of growing disparity, with the number of DSi on local roads increasing more rapidly than on State Highways. In part, this may be explained by the growing gap between road safety expenditure on State Highways compared to local government roads, as shown in Figure 1.

Local Road Safety Investment Program

To understand why safety performance on local roads is lagging State Highways, and why investment is static or falling, the Agency commissioned the development of an indicative nationwide program of works to identify if additional infrastructure investment could significantly reduce DSi on local roads. This local road safety investment program (colloquially known as the \$800 million program) was developed by collating the results of the following industry recognised risk assessment techniques that have been applied to local road networks:

- Urban KiwiRAP – Collective and Personal Risk maps
- Infrastructure Risk Rating (IRR)¹
- Intersection Collective and Personal Risk, as per the NZ Transport Agency’s High-Risk Intersections Guide²
- High-risk rural curves analysis
- High-risk motorcycling routes, as per the NZ Transport Agency’s Safer Journeys for Motorcycling in New Zealand guide³
- High-benefit speed management opportunities – where infrastructure intervention was identified as an appropriate response, as per the the NZ Transport Agency’s Speed Management Guide⁴

Road segments classified as being ‘high-risk’ by one or more of the assessment methods above were taken through for further assessment and prioritisation. Some 4,000 km of roads, which represent around 4% of the local road network by length and account for 36% of all fatal and serious crashes on local roads over the past 5 years, formed the basis of the local road safety investment program.

Generic treatments were assigned to each corridor or intersection based on the nature of the surrounding land use, functional road classification, and other relevant geometric and operational factors. The DSi reduction potential and implementation cost of each intervention were then assigned to each road segment. Three approaches to prioritisation were then evaluated, as follows:

- Targeted to DSi risk – prioritised based on roads with the highest number of DSi per km.
- Targeted to DSi reduction potential – prioritised based on roads with the greatest DSi reduction potential per km.
- Targeted to DSi reduction per \$\$ spent – prioritised based on the greatest DSi reduction potential per \$100M investment.

The ‘Targeted to DSi reduction potential’ was selected as the preferred approach to formulating the local road safety investment program. Further analysis found that safety benefits began to diminish quickly once the program value exceeded \$800 million. As such, an \$800 million program was identified as an optimal level of investment, which could be expected to generate a reduction of around 169 DSi per annum.

1 <https://www.nzta.govt.nz/safety/speed-management-resources/>

2 <https://www.nzta.govt.nz/resources/high-risk-intersections-guide/>

3 <https://www.nzta.govt.nz/resources/safer-journeys-motorcyclists/>

4 <https://www.nzta.govt.nz/safety/speed-management-resources/>

The Agency then commissioned a follow-up study to understand the alignment between proposed local government road safety investment and the \$800 million program, which is the subject of this paper.

Local Government Engagement

The purpose of local government engagement study was twofold:

1. To identify the extent of alignment between planned local government road safety investment and the \$800 million program, and
2. To identify any internal and external factors that represented challenges or impediments to the effective delivery of road safety and ultimately better road safety outcomes.

A cross-section of different local government types, a combination of major and minor metropolitan centres, as well as smaller urban area centres and rural areas were selected for the study to obtain a wide breadth of responses covering different environments. The local governments included in the project were:

- Far North District Council
- Whangarei District Council
- Auckland Transport
- Hamilton City Council
- Waipa District Council
- Palmerston North City Council
- Wellington City Council
- Christchurch City Council

Alignment Method

The starting point of the study was to identify the degree of alignment between proposed local government investment for safety projects (assessed via data input to Transport Investment Online (TIO) for the 2018-21 period) and the \$800 million program. This involved extracting all projects from TIO where either Primary Outcome or one of the Multiple Outcomes was identified as 'Safety'. TIO is a repository of activities planned to be delivered by through the National Land Transport Programme (NLTP). The NLTP sets out activities that can receive funding from the National Land Transport Fund (NLTF) under the Land Transport Management Act 2003. The Agency uses an Investment Assessment Framework (IAF), developed in line with the Government Policy Statement on Land Transport Funding (GPS), to prioritise which proposals should receive funding. The NLTP and the Investment Assessment Framework (IAF) are the two key tools the Agency uses to give effect to the GPS.

Each planned safety project in TIO was then compared with the \$800 million program and against other parts of the local road network that were identified as high-risk but were not included in the prioritised program. A 'match' was assessed

to occur where the planned local government project overlapped with the \$800 million program or other high-risk locations.

Alignment Results

Overall, a high degree of matching was found between planned local government safety projects in the 2018-21 program, the \$800 million program and other high-risk locations. There was a 52% matching rate between planned local government safety projects and the \$800 million program and an additional 33% matching rate with other high risk locations.

None of the smaller district councils included in the study had proposed any individual safety projects in the 2018-21 program at the time of the study i.e. no co-funding was being sought from the Agency for projects exceeding \$300,000. For these councils, all safety improvement projects were funnelled through a low risk/low cost program. As the details of smaller projects that comprise the low risk/low cost program were not identifiable in TIO, this precluded the ability to determine if this planned safety investment was targeted at high-risk locations.

Workshops Method

Workshops were held with the local government during December 2017 and January 2018.

Each local government organisation was provided with their high-level matching results as part of the workshop invitation. In advance of each workshop, attendees were also provided with an agenda outlining the purpose of the workshop and a series of questions planned to stimulate discussion for the attendees to consider ahead of time. The list of questions circulated to attendees was:

1. What do you consider to be the biggest safety challenge in your area?
 - On urban roads?
 - On rural roads?
2. What do you consider to be the biggest challenge in delivering your program(s)?
3. What are your processes for developing your program(s)?
4. To what extent is your program(s) informed by your strategic priorities?
5. Does your organisation have a DS_i reduction target?
6. Do you have an estimate of the number of DS_i your program will save?
7. Has an assessment been undertaken into alignment of investment level and expected outcomes?
8. What engagement do you have with the Agency during development of program?
9. What process do you go through to determine projects in your minor safety program?

10. How do you prioritise your lists?
11. Are all projects prioritised against your priorities?
12. What staff do you have assigned to delivering your program?
13. How would an increase in funding help you deliver road safety more effectively?
14. Are there internal barriers preventing you from delivering effective road safety outcomes?
15. Are there external barriers preventing you from delivering effective road safety outcomes?
16. What would you like to do, but currently don't, and what's holding you back?
17. How could the Agency better assist you to deliver effective road safety outcomes?

Workshops Results

Overall, there was a high level of engagement and participation from local government staff in all workshops. Without exception, local government presented highly motivated staff who wanted to deliver positive road safety outcomes for the networks. Staff could readily identify internal and external factors that were preventing them from being as effective as desired. The challenges faced by local government to achieve better safety outcomes were discussed openly and frankly, and covered a broad spectrum of operational, funding, policy, political, legislative and industry matters. That level of engagement and willingness

Table 1. Key themes from local government workshops

Issue	Description
Funding	Increasing the Funding Assistance Rate (FAR) would encourage local government to do more.
Capacity	Most local governments are not adequately resourced to deliver effective road safety programs.
Stakeholder Support	National leadership is required to support local government with the implementation of measures that are unpopular.
Access to Information	Local government noted gaps in data required for decision-making and lacked awareness about where to access information.
Industry Training	Local government noted a lack of ongoing training and development of people in the road safety area.
Program Development	Local government struggle with aspects of program development, including composition, internal priorities and justification.
Enforcement	Local government want a widescale rollout of red-light and speed camera enforcement technology to support road safety efforts.

to share opinions was instrumental in uncovering some key themes can now be explored further to support local government in the development and delivery of their road safety programs.

Minutes were recorded of each workshop and circulated to attendees for review and comment.

The workshop minutes were then analysed individually and collectively to identify key themes, a summary of which is presented in Table 1.

Discussion

Funding

All local governments indicated they could deliver more road safety projects and larger programs if funding was increased.

A challenge noted was that funding for road safety projects competes with other local government activities, both within the wider transport activity class, and with infrastructure projects in general. Because specific delivery areas, such as road safety, compete for budget from the overall fund, most local governments indicated that increasing the Agency's Funding Assistance Rate (FAR) for road safety projects would be very helpful to encouraging local government to do more in the road safety area. This was seen as being particularly helpful for mass-action type projects.

Capacity Constraints

All local governments noted resourcing concerns, both within and external (consultants and contractors) to local government. The shortage of skilled local government staff was noted by most, and while some local governments were able to train staff to roles, staff caps were also identified as a problem. Major projects, such as the Safe Roads Alliance (based in the Waikato) and the North Canterbury Transport Infrastructure Rebuild (NCTIR) project were cited as being resource hungry projects that consumed a lot of resource that would otherwise be available to assist local government.

At a wider industry level, some local governments expressed concern about a lack of national leadership in progressing skilled people through the industry, especially in the road safety area. The fact that some of the key road safety experts at the NZ Transport Agency were at or nearing retirement age was not lost on local governments – citing concern about a potential loss of institutional knowledge. Both factors were identified as being prolonged capacity constraint risks for the industry.

Stakeholder Support

Most local governments identified the lack of support for unpopular measures from either elected officials or the public as being an obstacle to the delivery of some road safety projects. Competing priorities within local governments was also a concern, since some local governments would prioritise other outcomes – for

example infrastructure projects – over smaller scale safety improvements.

There was some confusion over ownership for responding to the safety challenge i.e. who should be responsible for effecting change and reducing DSI, and whose responsibility leading the delivery of road safety outcomes is. There was a suggestion that clarity was needed over what goals should be achieved and whose responsibility effecting change is.

Access to Information

Local governments expressed appreciation of the increased road safety guidance and high-risk tools that have been developed nationally for local use. Mega Maps was noted by most, as being their ‘go to’ place for road safety information. While Mega Maps was seen as a step forward, many local governments said they didn’t know where to go to access information and in what situation certain information was best used.

Many local governments mentioned data gaps which were detrimental to delivering programs. A key data gap noted was the lack of pedestrian and cyclist counts, or suitable techniques for estimating these at a network level. This information was considered particularly important, as the absence of count data for active road users was seen as a barrier to justifying safety improvement projects, even though the majority of benefits accrue for health reasons due to the dispersed nature of active road user crashes. There was also a lack of data available on lessons learned and developing trends, which local governments commented they had little time to undertake themselves.

Another common issue related to speed management. Specifically, local governments were looking for assistance, direction and/or reassurance about how they take the nationally available data presented in Mega Maps and develop their speed management implementation plans. The lack of case studies on this was mentioned by most local governments.

Industry Training

Some local governments noted a lack of ongoing training and development of people in the road safety area. The general feeling was that aside from the Safe System Engineering Workshop, ongoing education was achieved by attendance at conferences, rather than through nationally led targeted capability building workshops or training events. The Fundamental and Advanced Cycle Design courses run by the Agency were held-up as an example of something that would probably work well in the road safety area.

The lack of ongoing training at an advanced level meant that some local governments still resorted to reactive decision making when producing road safety projects, even though most acknowledged that proactive approaches were a better approach. This approach appeared to be a result of an incomplete knowledge base of all the recent developments in road safety, and a lack of confidence of how to shift towards a more proactive approach.

Program Development

One of the most common challenges raised by the workshop participants related to the process of developing programs. A range of different issues were identified, although common themes related to the need for safety driven projects to be prioritised against other programmed activities which results in a number of potential obstacles for delivery. Key points taken away from the workshops were:

- The raising of the Low Cost, Low Risk project cap from \$300,000 to \$1,000,000 was welcomed. This change was expected to enable local government to deliver more by removing the need to go through a business case process.
- Safety projects were often prioritised less highly than other transport or infrastructure projects according to individual local government priorities.
- Projects that generate travel time savings often produced a better Benefit to Cost Ratio (BCR) than safety projects and were therefore prioritised above safety projects. Safety projects may also increase travel times which would bring overall benefits down.
- Some local governments resorted to separating projects into smaller portions to avoid the need for NZ Transport Agency approvals. This approach meant a holistic approach to delivery was lost.
- Local government programs were subject to internal approval processes and political influence, both of which can create delay and result in programs including activities with little safety benefit.
- Local governments noted the fact that operating with fixed internal budgets meant they were unable to respond in an agile way to new challenges. Often relatively small scale and low-cost measures could not be funded because they were not programmed.

Related to this was the challenge of knowing how to produce a balanced safety program across a region. Challenges included balancing safety issues in different contexts e.g. rural v urban (see further explanation below), midblock v intersection etc. as well as safety issues for different user groups and safety themes e.g. speed management v intersection improvements v curve safety v roadside hazard protection/removal. Local governments requested guidance at a strategic level on the composition of their road safety programs. In the absence of that strategic guidance, local governments tended to default to prioritisation based on BCR and with a heavy reliance on delivering via the low-cost, low-risk budget.

Rural Areas

Rural areas face some different challenges to urban areas. A low ratings base and dispersed networks can make funding for safety projects and enforcement of undesirable behaviours challenging. They may also face challenges in finding staff, consultants and contractors to undertake project work.

Widespread speed reduction was seen to be the main tool to address safety concerns in rural areas, but again the issue around public acceptance was noted as a concern. Other approaches to improve safety in rural areas included improving the safety of curves and targeted safety maintenance e.g. improved skid resistance.

Urban Areas

In urban areas, the complex interplay between priorities was noted as causing challenges for local governments. The balance between encouraging walking and cycling and achieving safety outcomes was identified as a particularly challenging issue, with the key point of contention being that active travel is inherently less safe compared to driving. The Agency has already gone a long way to acknowledging the health benefits of active travel outweigh the safety risks through incorporating these benefits in the way projects are assessed. However, in the road safety area, there would appear to be missing metrics and targets related to the broader personal health and environmental benefits of active travel. Retaining a sole focus on active road user safety metrics has the potential to stymie continued improvement of safe infrastructure for active travel unless a broader view is adopted.

Increased Enforcement

Although not a core function of local governments, most indicated that there should be a widescale rollout of red-light and speed camera enforcement technology given its proven effectiveness in addressing unacceptable behaviour that leads to poor road safety outcomes. The consensus view was that the level of enforcement did not match the scale of the road safety problem. The reduction in physical police enforcement presence on roads was also mentioned, but to a lesser extent than the technology-based solutions.

Outcomes of the Study

The study is somewhat unique in that it is rare to formally ask questions and record responses about how a central organisation can better support local government. Now in possession of these responses, the Agency is identifying how it can better assist local government. The study has reinforced to the Agency that it could do more, and gone further by identifying what the challenges, barriers and issues are that need to be focused on to improve local government effectiveness at delivering road safety outcomes.

The feedback has helped the Agency realise how complex the delivery of safety outcomes is at a local government level. Clearly, supporting local government through increased funding or raising the FAR is only one part of a much broader approach need to address the issues. Resolving capacity constraints, providing leadership to garner stakeholder support and upskill the industry, improving access to information and providing assistance with program development are other factors that need attention.

The Agency has started the journey by taking a leadership role in the speed management and program development areas. They are developing nationwide speed management and infrastructure improvement programs and sharing these with local government to help them develop their regionally led programs. This systemic approach effectively treats all roads in New Zealand as one network. In doing so, it is facilitating targeted road safety investment in the areas that need it most, and reducing the need for local government to start from scratch when developing their safety programs. The study has opened the door to a collaborative approach with the ability to cluster and partner as appropriate to share information and grow capability while ensuring safety investment is better targeted.

The study demonstrates the benefit of openly engaging with key stakeholders and provides a strong platform to outline the steps the Agency needs to take to break down the barriers to effective local government road safety delivery. The lessons learnt from this study are expected to be applicable throughout Australasia and therefore be of interest to everyone involved in the delivery of local government road safety programs.

Acknowledgements

The authors acknowledge wish to thank the participating local governments for their high level of engagement in the study and willingness to discuss the challenges and barriers to achieving better safety outcomes in an open and candid manner. That was instrumental in uncovering some key themes can now be explored further by the Agency to better support local government in the development and delivery of their road safety programs.